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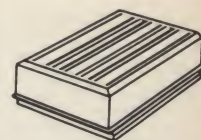
WESTERN LOW SILHOUETTE ROOF VENTILATORS



WESTERN ENGINEERING & MFG. CO. • LOS ANGELES 66, CALIFORNIA













1960 EDITION

Member of Air Moving and Conditioning Association, Inc.



WESTERN ENGINEERING & MFG. CO. Established in 1921, the basic philosophy underlying the growth of Western Engineering & Mfg. Co. has been the development of maximum product value through quality, performance and service. Time is an essential factor in this basic philosophy, without it product value has little meaning, as it takes time for a product to prove its merit.

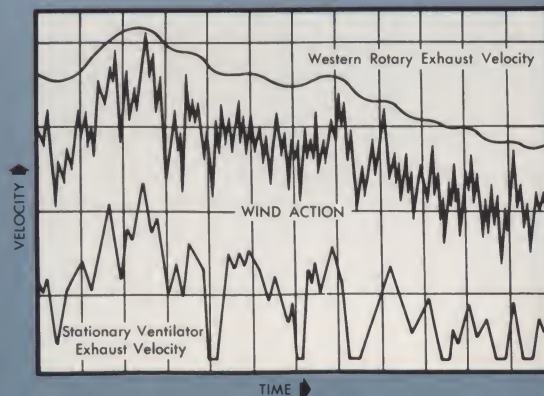
Since 1921, Western has introduced new products and refined the design of existing products. The wide selection of high quality ventilation equipment Western has developed is reflected in the hundreds of thousands of operating installations throughout the world. Maximum product value, the prime objective since 1921, remains the controlling influence in the present and the future.

Western Rotary		High exhaust capacity, small bulk and weight. Continuous motion, even between wind gusts. Stormproof. No backdraft. Lifetime bearing guarantee; rigid center support; vibration absorptive rubber mountings. Enclosed, long-life lubrication.	page 2-5
Forbes Syphonaire* Amvent* Econovent*	  	Syphonaire —High capacity stationary type ventilator. Rainproof and stormproof. Rugged, low construction; resists high wind velocities. Approved for government projects. Amvent —Meets all requirements for a stationary roof ventilator. Removable top plate. Available with bird and/or insect screens and counterweighted, fusible-link damper, if required. Econovent —A stationary ventilator offering engineered construction at a low price. Exceeds "shop-built" units in performance.	6-7
Western Airout		Airout —A directional ventilator. Moves in the direction of the air-stream for maximum exhaust power. The only directional ventilator with certified capacity ratings. Perfectly balanced, rugged and stormproof.	6-7
Westernaire Curb Mounted Fan		Does a three-way job—increases capacity, provides lower installed height, reduces vent throat size. Built-in square to round base. Operates in combination with most ventilators. Has sealed-in motor unit, fan blades same diameter as throat section for high exhaust volume.	8
Westernaire Booster Fan		Mounted in duct section between roof base and gravity ventilator. May be added after original installation. Permits normal exhaust flow when off. Has sealed-in motor unit. High-speed, high-volume industrial, or low-speed, quieter commercial models.	9
Bases • Accessories			9
Westernaire Axial Roof Ventilators Vertical Exhaust Hooded Exhaust	 	Low silhouette high efficiency power roof ventilators for vertical or horizontal air discharge. Venturi throat sections for decreased air turbulence. Direct connected or belt-driven. Stormproof. Vertical exhauster is high capacity industrial "blow-open" type. Prevents roof damage or re-entry of air in building. Hooded Exhaust unit utilizes aerodynamically correct spun housing. Exhaust capacity comparable to vertical exhauster. 360° discharge pattern.	10-11
Western Continuous Ridge Ventilator*		Exhausts tremendous volumes of contaminated air and excessive heat. Architecturally pleasing. Fabricated in any length and mounting, with dampers, bird and insect screens, where required. Stormproof. Excellent drainage. Efficient. Heavy construction.	12-13
Western Thermoflow*		Low silhouette gravity unit provides over 33 square feet of opening. Only 21½" low. Exhausts huge quantities of foul air. Also acts as fire vent. May be installed in multiples.	14
Western Transaire		Single basic roof ventilator design for continuity of roof appearance. Low silhouette for gravity or power exhaust. Also used as a supply unit, with or without power.	15
Representatives			16

*Solaire Modifications shown on page 6.

ROTARY VS. STATIONARY

The medial curve of this graph has been compiled from anemometer data furnished by the U. S. Weather bureau, showing a typical pattern of wind velocity variation, ranging from 0 to 15 mph, over a period of several hours. Along with this are curves showing the relative action of rotary and stationary type ventilators. This graph is intended to illustrate relative performance characteristics, and is not a quantitative comparison of the two types. The Western Rotary Ventilator keeps spinning between gusts, yielding a high, constant exhaust in spite of intermittent winds. Note the smooth and continuous curve of its exhaust action compared to the irregular pattern of the stationary ventilator, which can only follow the wind pattern, is essentially inoperative between wind peaks, and has flats of complete inactivity during lulls.





ROOF VENTILATORS

gravity exhaust

WESTERN ROTARY®

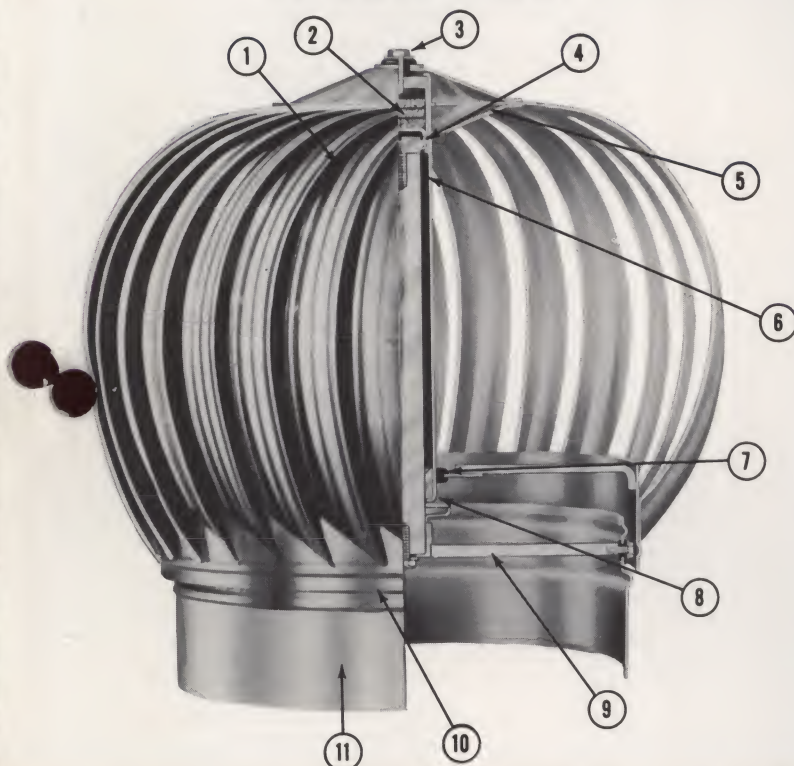
From top to bottom, every part of the Western Rotary has been designed and engineered to provide trouble-free operation over the years. Skilled engineers have made many new improvements.

The following are some of Western Rotary's special features: Rigid central support and perfect bearing alignment permit a minimum clearance between the rotor and stationary throat, with resulting improved draft. A patent-pending, radial thrust-bearing suspension of the rotor reduces rotational friction to a minimum, and the locked-on construction makes it impossible for the rotor to blow off. A rubber grommet insulation at all mounting points insures silent operation. The center support and cylindrical casing, together with the enclosed bearings, constitute a single, easily replaced unit, containing in its upper part a totally-enclosed, wool-packed lubricant reservoir which is dustproof, weatherproof, and protected from drying.



Photo—Courtesy Hughes Aircraft Company

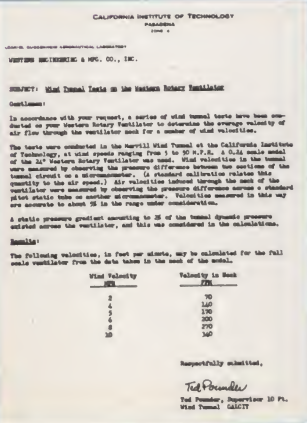
Lifetime Bearing Guarantee



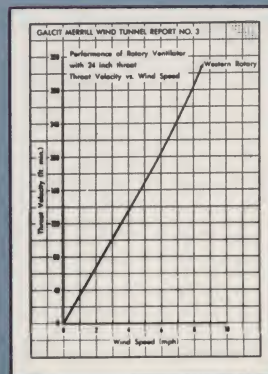
FEATURES

- 1 Exclusive Corrugated Vane Design ensures rigidity, and prevents shipping damage.
- 2 Wool-Packed Lubricant Reservoir is oversized to ensure years of operation with minimum maintenance, under most severe conditions.
- 3 Locked-On Rotor prevents loss or damage in the highest winds, yet the ventilator is easy to disassemble without special tools.
- 4 Patented* Bearing Suspension new radial thrust ball-bearing keeps friction loading so low that momentum keeps the head spinning even in sporadic winds.
- 5 Box-Girder Construction is used for rigidity and permanent alignment.
- 6 Permanently Sealed Weatherproof Casing protects upper and lower bearings from airborne dust and grit.
- 7 Six Rubber Mountings completely isolate head from throat—no noise or vibration can be transmitted.
- 8 Sintered Bronze Radial Bearing is oil-impregnated for minimum friction drag and long operating life.
- 9 New Support Spider Assembly redesigned for greater strength and rigidity.
- 10 Minimum Clearance Between Base and Rotor prevents backdrafts or air spillage.
- 11 Baked Enamel Finish in soft sea-green hammertone blends with any exterior, modern or traditional.

* Pending



Science proves efficiency of Western Rotary turbines in controlled wind tunnel tests. This letter from the California Institute of Technology explains analytical procedure employed in actual wind tunnel tests displaying the high efficiency of the Western Rotary Ventilator.



Observe the increasing gradient of the throat exhaust velocity as the wind speed increases, which proves that the ventilator cannot backdraft. The reason for this is obvious, because as the wind increases, so does the speed of the rotor, and therefore the exhausting power.

WESTERN ROTARY® TURBINE SELECTION

In order to determine the exhaust capacity of any model Western Rotary Ventilator under varying conditions of wind velocity, temperature difference between inside and outside air, and height of ventilator above intake (windows, doors, etc.) the table below may be used.

To determine exhaust capacity of various sizes under conditions considered to be average, merely use 5 MPH column, 10° temperature difference, and 30' stack height.* All capacities are based on certified tests conducted by the Guggenheim Aeronautical Laboratory, California Institute of Technology. *See block ☐

Outdoor Wind Velocity MPH		2			4			5			6			8			10			Model No.
Temp. Diff. °F.		10	20	30	10	20	30	10	20	30	10	20	30	10	20	30	10	20	30	
Throat Size In.	Ht. above Intake, Ft.	E X H A U S T C A P A C I T Y — C F M																		
6	10	114	125	130	210	221	226	266	277	282	314	325	330	426	437	442	534	545	550	WR-6
	20	122	135	144	218	231	240	274	287	296	322	335	344	434	447	456	542	555	564	
	30	129	144	156	225	240	252	281	296	308	329	344	356	441	456	468	549	564	576	
	40	135	152	166	231	248	262	287	304	318	335	352	366	447	464	478	555	572	586	
8	10	157	176	191	286	305	320	361	380	395	427	446	461	574	593	608	724	743	758	WR-8
	20	173	196	213	302	325	342	377	400	417	443	466	483	590	613	630	740	763	780	
	30	186	213	233	315	342	362	390	417	437	456	483	503	603	630	650	753	780	800	
	40	196	227	251	325	356	380	400	431	455	466	497	521	613	644	668	763	794	818	
10	10	209	222	274	370	383	435	463	476	528	545	558	610	728	741	793	915	928	980	WR-10
	20	234	269	301	395	430	462	488	523	555	570	605	637	753	788	820	940	975	1007	
	30	254	301	328	415	462	489	508	555	582	590	637	664	773	820	847	960	1007	1034	
	40	269	318	355	430	479	516	523	572	609	605	654	691	788	837	874	975	1024	1061	
12	10	268	308	335	460	500	527	574	614	641	670	710	737	890	930	957	1114	1154	1181	WR-12
	20	302	352	390	494	544	582	608	658	696	704	754	792	924	974	1012	1148	1198	1236	
	30	330	390	437	522	582	629	636	696	743	732	792	839	952	1012	1059	1176	1236	1283	
	40	352	422	476	544	614	668	658	728	782	754	824	878	974	1044	1098	1198	1268	1322	
14	10	333	383	422	558	608	647	691	741	780	804	854	893	1062	1112	1151	1324	1374	1413	WR-14
	20	376	444	496	601	669	721	734	802	854	847	915	967	1105	1173	1225	1367	1435	1487	
	30	413	496	560	638	721	785	771	854	918	884	967	1031	1142	1225	1289	1404	1487	1551	
	40	444	539	614	669	764	839	802	897	972	915	1010	1085	1173	1268	1343	1435	1530	1605	
15	10	364	426	465	604	666	705	745	807	846	867	929	968	1142	1204	1243	1422	1484	1523	WR-15
	20	415	493	552	655	733	792	796	874	933	918	996	1055	1193	1271	1330	1473	1551	1610	
	30	458	552	626	698	792	866	839	933	1007	961	1055	1129	1236	1330	1404	1516	1610	1684	
	40	493	603	687	733	843	927	874	984	1068	996	1106	1190	1271	1381	1465	1551	1661	1745	
16	10	399	469	515	654	724	770	804	874	920	935	1005	1051	1228	1298	1344	1527	1597	1643	WR-16
	20	457	546	613	712	801	868	862	951	1018	993	1082	1149	1286	1375	1442	1585	1674	1741	
	30	506	613	697	761	868	952	911	1018	1102	1042	1149	1233	1335	1442	1526	1634	1741	1825	
	40	546	670	767	801	925	1022	951	1075	1172	1082	1206	1303	1375	1499	1596	1674	1798	1895	
18	10	476	564	623	755	843	902	924	1012	1071	1071	1159	1218	1399	1487	1546	1737	1825	1884	WR-18
	20	549	662	747	828	941	1026	997	1110	1195	1144	1257	1342	1472	1585	1670	1810	1923	2008	
	30	611	747	853	890	1026	1132	1059	1195	1301	1206	1342	1448	1534	1670	1776	1872	2008	2114	
	40	662	819	941	941	1098	1220	1110	1267	1389	1257	1414	1536	1585	1742	1864	1923	2080	2202	
20	10	548	657	729	870	979	1051	1060	1169	1241	1220	1329	1401	1588	1697	1769	1966	2075	2147	WR-20
	20	636	776	880	958	1098	1202	1148	1288	1392	1308	1448	1552	1676	1816	1920	2054	2194	2298	
	30	712	880	1010	1034	1202	1332	1224	1392	1522	1384	1552	1682	1752	1920	2050	2130	2298	2428	
	40	776	969	1119	1098	1291	1441	1288	1481	1631	1448	1641	1791	1816	2009	2159	2194	2387	2537	
24	10	716	874	978	1101	1259	1363	1327	1485	1589	1522	1680	1784	1963	2121	2225	2412	2570	2674	WR-24
	20	844	1046	1196	1229	1431	1581	1455	1657	1807	1650	1852	2002	2091	2293	2443	2540	2742	2892	
	30	954	1196	1384	1339	1581	1769	1565	1807	1995	1760	2002	2190	2201	2443	2631	2650	2892	3080	
	40	1046	1324	1542	1431	1709	1927	1657	1935	2153	1852	2130	2348	2293	2571	2789	2742	3020	3238	
30	10	1139	1385	1545	1719	1965	2125	2070	2316	2476	2379	2625	2785	3068	3314	3474	3769	4015	4175	WR-30
	20	1342	1655	1890	1922	2235	2470	2273	2586	2821	2582	2895	3130	3271	3584	3819	3972	4285	4520	
	30	1514	1890	2185	2094	2470	2765	2445	2821	3116	2754	3130	3425	3443	3819	4114	4144	4520	4815	
	40	1655	2090	2430	2235	2670	3010	2586	3021	3361	2895	3330	3670	3584	4019	4359	4285	4720	5060	
36	10	1613	1967	2201	2475	2829	3063	2988	3342	3576	3418	3772	4006	4414	4768	5002	5428	5782	6016	WR-36
	20	1901	2354	2692	2763	3216	3554	3276	3729	4067	3706	4159	4497	4702	5155	5493	5716	6169	6507	
	30	2148	2692	3115	3010	3554	3977	3523	4067	4490	3953	4497	4920	4949	5493	5916	5963	6507	6930	
	40	2354	2981	3470	3216	3843	4332	3729	4356	4845	4159	4786	5275	5155	5782	6271	6169	6796	7285	
42	10	2183	2663	2998	3350	3835	4170	4047	4527	4862	4645	5125	5460	6000	6480	6815	7365	7845	8180	WR-42
	20	2588	3203	3668	3760	4375	4840	4452	5067	5532	5050	5665	6130	6405	7020	7485	7770	8385	8850	
	30	2928	3668	4243	4100	4840	5415	4792	5532	6107	5390	6130	6705	6745	7485	8060	8110	8850	9425	
	40	3203	4058	4723	4375	5230	5895	5067	5922	6587	5665	6520	7185	7020	7875	8540	8385	9240	9905	
48	10	2868	3500	3925	4412	5044	5469	5308	5940	6365	6078	6710	7135	7843	8475	8900	9638	10270	10695	WR-48
	20	3378	4185	4785	4922	5729	6329	5818	6625	7225	6588	7395	7995	8353	9160	9760	10148	10955	11555	
	30	3817	4785	5535	5361	6329	7079	6257	7225	7975	7027	7995	8745	8792	9760	10510	10587	11555	12305	
	40	4185	5300	6175	5729	6844	7719	6625	7740	8615	7395	8510	9385	9160	10275	11150	10955	12070	12945	



ROOF VENTILATORS

gravity exhaust

HOW TO SPECIFY SIZE AND NUMBER

1. Figure cubic feet in space to be ventilated.
2. Determine rate of air change. (See schedule below.)
3. Divide cubic feet of air space by number of minutes required for air change (see below). Result is cubic feet of air to be exhausted per minute.
4. Recommended ventilator spacing is 20 ft. or in industrial buildings one or more ventilators per bay, depending on building width.
5. Divide results of No. 3 by number of ventilators you propose to use. Then turn to capacity data to determine size ventilator to specify.

RECOMMENDED PERIODS OF AIR CHANGE

	Air Change Minutes
Roll shops, warehouses	15
Churches	10
Dining rooms, farm buildings, pickling plants	8
Auditoriums, electric substations, engine rooms, garages, gymnasiums, machine shops, residences, wood shops	5
Cleaning & pressing plants, offices, packing plants, toilet rooms	4
Box annealing, electric motor rooms, paper mills, railroad round houses	3
Attics, breweries, dye plants, kitchens, laundries, pump rooms	2
Foundries, furnace buildings, heat treating, paint shops, plating shops	1

DIMENSIONS • WEIGHTS

Model and Size	In.		Ship Wt. Lbs.	Gauge Galv. Steel
	H	W		
WR-6	9 1/4	9	5	28-26
WR-8	13 1/2	12 1/2	7	28-26
WR-10	17	15 1/2	10	28-26
WR-12	17 1/4	17 1/2	14	26-24
WR-14	19	20	18	26-24
WR-15	20	21	19	26-24
WR-16	20 3/4	22 1/2	26	26-24
WR-18	23 3/4	25	31	26-24
WR-20	25 1/4	27	38	24-22
WR-24	30 1/4	33 1/4	55	24-22
WR-30*	36 1/2	40 1/2	110	22-20*
WR-36*	38	47	130	22-20*
WR-42*	44	53	180	20-18*
WR-48*	46	59	220	20-18*

* Rotor of Aluminum

NOMOGRAM

Model WR 6 8 10 12 14 15 16 18 20 24 30 36 42 48

For calculating the approximate number of WESTERN ROTARY VENTILATORS—based on GALT test—5 MPH 10° temperature difference, 30 ft. stack height.

Example The volume of building is 70,000 cubic feet, air change required every 15 minutes. Place ruler across Nomogram connecting 70 to 15. Read quantity of size required, i.e., 12-WR-8 or 3-WR-24, etc.

BUILDING VOLUME
cu. ft. x 1000

1000 •
900 •
800 •
700 •
600 •
500 •
400 •
300 •
200 •

AIR CHANGE
minutes

EXAMPLE LINE

• 15
• 10
• 8
• 5
• 4
• 3
• 2
• 1

NUMBER OF VENTILATORS REQUIRED

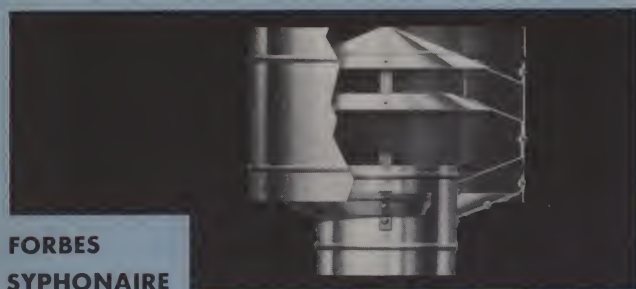
1					
2	1				
2	2	1			
2	2	1			
3	2	2	1		
4	3	2	2	1	
4	3	3	2	2	1
5	4	3	3	2	2
7	5	4	3	3	2
8	6	5	4	3	3
10	7	6	5	4	4
12	9	7	6	5	4
17	12	9	8	6	5
21	15	12	9	8	7
26	19	15	12	10	9
34	25	19	15	13	11
43	31	24	19	16	15
57	41	30	25	21	19
50	39	31	26	24	22
48	38	32	29	27	23
48	39	36	33	29	25
50	46	42	36	31	25
53	46	40	31	20	14
57	49	39	25	17	13
50	32	22	16	13	
63	40	28	21	16	
53	37	28	21		
48	35	27			
57	42	32			
52	40				
62	50				
84	64				
105	80				
95					
130					
160					

SPECIFICATIONS

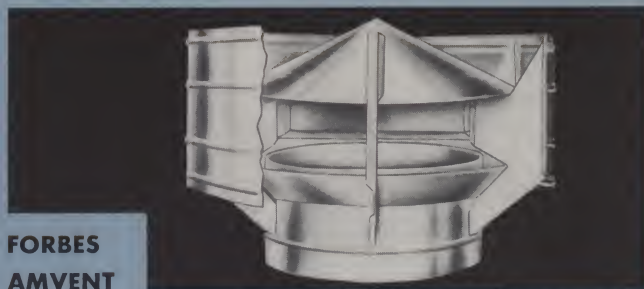
Ventilators shall provide mechanical ventilation through spinning action as manufactured by Western Engineering & Mfg. Co. of Venice, California and shall be mounted on square to round bases. Ventilators shall be weatherproof and shall be constructed to withstand encountered wind velocities. Ventilators are to have capacity ratings calculated by a non-commercial testing laboratory of University level. Ventilators shall have locked-on rotor, lubricant reservoir, factory sealed bearings, and rubber isolation mountings.

BASES • ACCESSORIES

Square to round bases for any type roof are shown on page 9. Manually operated dampers are also available. See page 9. Bird and insect screens are not required in Western Rotary Ventilators.

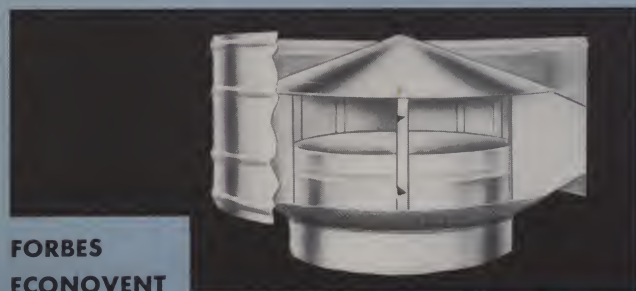


**FORBES
SYPHONAIRE**



**FORBES
AMVENT**

See below for Solaraire Modification



**FORBES
ECONOVENT**



**WESTERN
AIROUT**

SOLARAIRE MODIFICATIONS

To Provide Skylight-Ventilator Combination Units



Fig. 1
Stationary Type
Pages 6 and 7



Fig. 2
Continuous Ridge Type
Pages 12 and 13



Fig. 3
Unit Ventilator Type
Page 14



Fig. 4
Stationary Type
All Fiberglas* Construction

A new concept in roof ventilator design and application. Western Roof Ventilators employing Solaraire modifications utilize translucent Fiberglas* top plates, available in various colors, to provide a combination skylight-ventilator. Now it is possible to provide natural daylight in any area requiring ventilation, at a fraction of skylight cost.

Indestructible Fiberglas* will not crack or break and is unaffected by salt spray, weather, fumes and most harmful chemicals.

Solaraire modifications are available in all stationary type ventilators as shown in Fig. 1, view from bottom.

Solaraire modifications are available on all Western Continuous Ridge Ventilators. Where dampers are required, translucent Fiberglas* construction permits light transmission whether damper is open or closed. See Fig. 2, view from bottom.

Western Thermoflow units are also available with Solaraire modifications in top plates and dampers. See Fig. 3, view from bottom.

Installations requiring non-metallic construction for chemical resistance, micro-wave passage, etc., are particularly suited for bonded Fiberglas* construction. Available in various colors. See Fig. 4.

*TM Owens-Corning Fiberglas Corporation



gravity exhaust

FORBES SYPHONAIRE

Certified capacity ratings. Approved for all government projects. Wide circular wind band construction generates a partial vacuum regardless of wind direction. No exposed openings to allow outside air to enter. U.S. Bureau of Standards, Washington, D. C.—“It is best not to allow the air to enter the ventilator, for it must then be exhausted, and will be exhausted at the expense of the air in the ventilator pipe.” Low design resists high wind velocity; no guy wires needed. Rugged construction for lifetime use; rainproof; stormproof. Attractive, functional appearance. Ventilators painted inside and out with special high adhesion gray primer. Finish coat is offered as an extra, if desired.

FORBES AMVENT

This ventilator is engineered specifically to fulfill government specifications for a stationary roof ventilator, including material, structure and exhaust capacity. Meets Corps of Engineers Guide Specifications CE220.09, Oct. 5, 1951. It has a removable top plate and is available with bird and/or insect screens and counterweighted fusible linked damper, if required. Consult our engineering department for unlisted sizes, material alterations or additional information. Ventilators painted inside and out with special high adhesion gray primer. Finish coat is offered as an extra, if desired.

FORBES ECONOVENT

Has rugged design of finest ventilators. Exceeds “shop-built” units in performance. Engineered construction at a low price. Certified capacity ratings. Ventilators painted inside and out with special high adhesion gray primer. Finish coat extra, if desired.

WESTERN AIROUT

A directional type ventilator employing the same patented* bearing suspension used in the Western Rotary Ventilator (see Page 3). This ventilator has been wind-tunnel tested at the California Institute of Technology, and all exhaust capacities are certified. Ventilators painted inside and out with special high adhesion gray primer. Finish coat is offered as an extra, if desired.

SPECIFICATIONS

Ventilators shall be: (specify one) Syphonaire, Amvent, Econovent, Airout, as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be mounted on the manufacturer's square to round bases. Ventilators shall be weatherproof and shall be constructed to withstand encountered wind velocities. Ventilators shall be constructed of: (specify one) Galvanized Steel, Aluminum, Copper, Stainless Steel. Ventilators shall have exhaust capacity ratings calculated by a non-commercial testing laboratory of University level. Where necessary, dampers (disc or butterfly type) shall be located in the stack of the ventilator.

GENERAL INFORMATION

Bases • Accessories

Square to round bases for any type roof and bird and insect screens are shown on page 9. Manually operated disc or butterfly dampers are supplied as an optional extra. See page 9.

Booster Fans • Curb Mounted Fans

Specify an inverted cone when any stationary ventilator is used in conjunction with any fan. This unit will reduce the static resistance offered by the ventilator head and, therefore, will increase exhaust capacity. Specify when the Western Airout is used in conjunction with any fan.

* Pending

ENGINEERING DATA

Certified Exhaust Capacity-CFM		Throat Size In.	Model No.	Dimensions In.		Galvanized Steel	
5 MPH	10 MPH			H	W	Gauge MSG	Ship. Wt.-Lbs.
Syphonaire†							
79	126	6	FS-6	8	11	26	6
140	224	8	FS-8	11	17	26	8
219	349	10	FS-10	11½	19	26	14
315	503	12	FS-12	18	23	26	19
429	685	14	FS-14	21½	26	24	32
493	786	15	FS-15	21½	28	24	35
561	895	16	FS-16	25	30	24	40
708	1130	18	FS-18	26½	33½	24	48
875	1396	20	FS-20	27½	38	24	92
1259	2010	24	FS-24	30	44	24	130
1969	3144	30	FS-30	39	54	24-22	195
2834	4526	36	FS-36	39	60	24-20	220
3860	6160	42	FS-42	39	70	22-20	330
5040	8042	48	FS-48	47	88	22-20	360

Amvent*

68	105	6	FA-6	6½	10	24	6
121	184	8	FA-8	8¾	13½	24	8
189	291	10	FA-10	11¾	16¾	24	11
274	416	12	FA-12	13	20	24	14
374	571	14	FA-14	15¾	23¾	24	23
429	655	15	FA-15	16	25	24	27
487	749	16	FA-16	17½	26¾	24	30
616	946	18	FA-18	19¼	30	24	41
760	1166	20	FA-20	20¾	33¾	24	46
1093	1680	24	FA-24	26	40	24	100
1717	2632	30	FA-30	33½	50	22	151
2463	3781	36	FA-36	35	60	22	180
3352	5133	42	FA-42	40¼	70	20	310
4378	6738	48	FA-48	45½	80	20	450

Econovent*

56	75	6	FE-6	6½	10¾	26	4
100	134	8	FE-8	9	13½	26	6
154	208	10	FE-10	10¾	17	26	10
223	301	12	FE-12	11¾	21	26	11
304	409	14	FE-14	12½	23¾	26	15
349	470	15	FE-15	14	24½	26	25
398	536	16	FE-16	15¼	26½	24	28
503	677	18	FE-18	16½	31	24	35
619	835	20	FE-20	18	34	24	40
892	1202	24	FE-24	21½	41	24	95
1394	1881	30	FE-30	27	50	24	120
2010	2708	36	FE-36	32	60	24-22	215
2733	3685	42	FE-42	39	68	22-20	305
3565	4810	48	FE-48	44¾	78	22-20	350

Airout†

66	100	6	WA-6	15½	11	26	7
118	178	8	WA-8	19	14½	26	9
184	277	10	WA-10	21¾	17	26	12
266	399	12	WA-12	24¾	20¼	24	16
362	543	14	WA-14	27¼	23	24	22
415	623	15	WA-15	30½	24½	24	29
474	711	16	WA-16	33¼	26	24	34
601	898	18	WA-18	34½	29½	24	40
737	1108	20	WA-20	37	30	24	46
1062	1595	24	WA-24	45	36	24	65
1659	2493	30	WA-30	54	43	22	160
2390	3590	36	WA-36	56	54¼	22	221
3252	4890	42	WA-42	66	63½	20	310
4242	6380	48	WA-48	75	72	20	400

* GALTIT TEST—10°F temperature difference, 20 ft. stack height

† GALTIT TEST—10°F temperature difference, 30 ft. stack height

WESTERNAIRE® **CURB** **MOUNTED** **FAN**

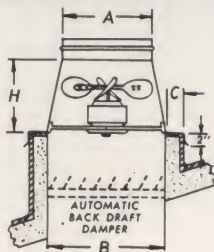


ENGINEERING DATA

Note:

If static pressure is 1/4" or greater, specify such when ordering. Specifications subject to change without notice.

For applications involving excessive heat, dust, or explosive vapors consult our engineering department. Fan capacities based on Standard Test Codes.



Exhaust Capacity—CFM			Model No.	Motor		Dimensions In.			
Static Pressure				HP	RPM	A	B	C	H
0 In.	1/8 In.	1/4 In.							
286 330	160 210	110 141	CM-8A CM-8B	6 watt 9 watt	1500 1500	8	12 x 12 12 x 12	2	8 8
605 745	505 615	345 420	CM-10A CM-10B	0.035 1/20	1500 1500	10	14 x 14 14 x 14	2	8 8
880 1050 1280	795 955 1160	570 725 965	CM-12A CM-12B CM-12C	1/20 1/20* 1/10	1500 1500 1500	12	16 x 16 16 x 16 16 x 16	2	10 10 10
1120 1410 1620	1045 1295 1500	895 1115 1350	CM-14A CM-14B CM-14C	1/20* 1/10 1/6	1500 1500 1500	14	18 x 18 18 x 18 18 x 18	2	12 12 12
1730 1920 2220	1615 1700 2025	1455 1405 1740	CM-16A CM-16B CM-16C	1/10* 1/8 1/6	1500 1140 1140	16	20 x 20 20 x 20 20 x 20	4	12 12 14
2285 2710 3040	2125 2500 2870	1865 2170 2680	CM-18A CM-18B CM-18C	1/8* 1/6* 1/4	1140 1140 1140	18	22 x 22 22 x 22 22 x 22	4	16 18 18
2620 3150 3700 4350	2400 2925 3500 4130	1800 2580 3250 3800	CM-20A CM-20B CM-20C CM-20D	1/6 1/4 1/3 1/2	1140 1140 1140 1140	20	24 x 24 24 x 24 24 x 24 24 x 24	4	16 18 18 18
4640 5480 6220 7360	4225 5180 6065 7190	3480 4440 5660 6865	CM-24A CM-24B CM-24C CM-24D	1/4 1/2 1/2 1	860 860 1140 1140	24	30 x 30 30 x 30 30 x 30 30 x 30	4	16 16 16 20
6440 7480 9100 10000	5320 6710 8450 9610	3650 5910 7500 9050	CM-30A CM-30B CM-30C CM-30D	1/3* 1/2* 1 1 1/2	600 860 860 1140	30	36 x 36 36 x 36 36 x 36 36 x 36	4	16 16 22 22
11300 14800 16400 21650	8970 13400 14900 20650	3900 11900 13200 19600	CM-36A CM-36B CM-36C CM-36D	1/2 1 1 1/2 3	600 860 860 1140	36	42 x 42 42 x 42 42 x 42 42 x 42	4	16 16 22 22
16200 18000 23400 26000	14700 15500 21800 24300	13250 12200 20100 22500	CM-42A CM-42B CM-42C CM-42D	3/4 1 2 3	600 600 860 860	42	48 x 48 48 x 48 48 x 48 48 x 48	4	22 22 22 22
20000 23800 29200 38750	17400 21200 26750 36800	14150 18000 25200 34800	CM-48A CM-48B CM-48C CM-48D	1 1 1/2 3 5	600 600 860 860	48	54 x 54 54 x 54 54 x 54 54 x 54	4	22 22 22 22

* Uses next higher standard size motor for 1/4 in. static pressure.

All motors totally enclosed except 1/10 H.P., 1/6 H.P., 1500 R.P.M.

Note: If fan is used in conjunction with a stationary type ventilator, use 1/8" static pressure capacity column. If an automatic shutter is also used, use 1/4" static pressure capacity column and comparable HP rating.

The Westernaire Curb Mounted fan does a three-way job. It increases exhaust capacity, provides lower overall installation height, and reduces ventilator throat size for a given air requirement. It consists of a square-to-round base with a sturdily-mounted motor-blade assembly, and increases exhaust through the use of a propeller having the same diameter as the throat section. Operating with any Western ventilator it does a thorough job of ventilating. The ventilator provides continuous 24-hour exhaust. During periods of excessive air contamination, the fan may be operated to relieve the condition.

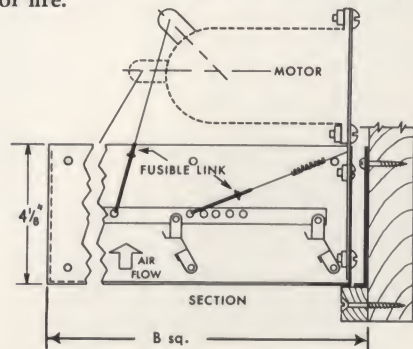
FEATURES

- Useable with ANY ventilator of same throat size.
- High speed and velocity for industrial use or slow speed, quiet operation for commercial use.
- Best results when used with Western Rotary Ventilator due to negligible static resistance.
- Motor is same, sealed-in, easy-to-operate unit as used in booster fan.
- Low installation cost.

AUTOMATIC SHUTTERS



Automatic shutters are offered as an optional extra for use with the curb-mounted fan. These shutters mount inside the wood curb ("B Dimension") and remain normally closed. Be sure to specify this dimension when ordering. Aluminum louvers, full opening for maximum fan delivery, sensitive operation, anti-friction pivot pins and resistance to corrosion are features of this equipment. Fusible links release spring action in case of fire.



No. 611. Air Actuated

Will open quickly upon operation of fan. Closes immediately after fan is shut off. Manual operation available.

No. 612. Motorized version of No. 611

Electric motor holds shutter open, rather than air flow, provide increased exhaust. Also, if independently with shutter may be opened with fan off, to provide ventilation by gravity ventilator. Electrical characteristics: 115V standard, 220V or 440V available.



ROOF VENTILATORS

exhaust boosters (motor operated) bases • accessories

WESTERNAIRE®

BOOSTER FAN

duct mounted



INCREASES EXHAUST POTENTIAL WHEN NEEDED

This is a motor and blade assembly mounted in a round duct, fitting between the roof base and throat of any ventilator. Normal ventilator operation continues when fan is off, but during periods of excessive heat, dust, fumes or smoke, the fan may be called upon to rapidly clear working areas. This unit fits *any* Western ventilator and may be added *after* original installation. To add a booster fan is a simple, inexpensive operation. Available as a high-speed, high-velocity industrial unit or slow-speed, quieter-operating, commercial structure.

Note:

When static pressure is $\frac{1}{4}$ " or greater, specify such when ordering.

For service under conditions involving excessive heat, dust, grease, corrosive or explosive vapors, or higher static resistance please be sure to consult our engineering department.

Fan Capacities Based on Standard Test Codes.

ENGINEERING DATA

Exhaust Capacity—CFM			Model No.	Motor		Dimensions In.	
Static Pressure				HP	RPM	Throat	Height
0 In.	1/8 In.	1/4 In.					
284 302	160 180	80 110	BF-8A BF-8B	4 watt 6 watt	1500 1500	8 8	10 10
440 615	275 510	190 425	BF-10A BF-10B	9 watt 0.035	1500 1500	10 10	10 10
965 1120	830 900	700 760	BF-12A BF-12B	1/20 1/10	1500 1500	12 12	12 12
1050 1280	955 1160	725 965	BF-14A BF-14B	1/20* 1/10	1500 1500	14 14	15 15
1120 1410	1045 1295	790 1115	BF-15A BF-15B	1/20* 1/10	1500 1500	15 15	15 15
1410 1620	1295 1500	1115 1350	BF-16A BF-16B	1/10 1/6	1500 1500	16 16	15 15
1730 2220	1615 2025	1455 1740	BF-18A BF-18B	1/10* 1/6	1500 1140	18 18	18 18
2285 2710	2125 2500	1865 2170	BF-20A BF-20B	1/8* 1/6*	1140 1140	20 20	18 18
2620 3700	2400 3500	1800 3250	BF-24A BF-24B	1/6 1/3	1140 1140	24 24	24 24
5400 6190	4310 5590	3210 4800	BF-30A BF-30B	1/3 1/2	600 860	30 30	24 24
6440 7480	5320 6710	3650 5910	BF-36A BF-36B	1/3* 1/2*	600 860	36 36	24 24
11300 14800	8970 13400	3900 11900	BF-42A BF-42B	1/2 1	600 860	42 42	30 30
18000 23400	15500 21800	12200 20100	BF-48A BF-48B	1 2	600 860	48 48	30 30

* Uses next higher standard size motor for $\frac{1}{4}$ in. static pressure.

All motors totally enclosed except 1/10 HP, 1/6 HP 1500 R.P.M.

Note: If fan is used in conjunction with a stationary type ventilator, use $\frac{1}{8}$ " static pressure capacity column. If an automatic shutter is also used, use $\frac{1}{4}$ " static pressure capacity column and comparable HP rating.

BASES • ACCESSORIES

WESTERN STANDARD BASES

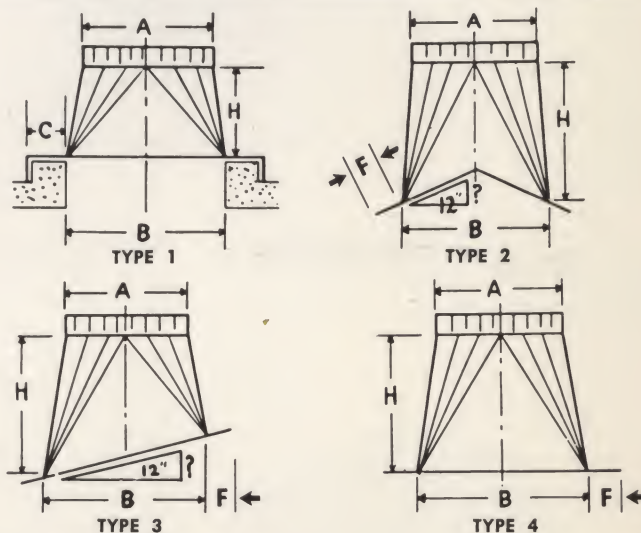
Western bases can be supplied to fit any type of roof. The most common types are illustrated below. All bases are of the square to round type. This type is the only kind recommended because of increased air exhaust flow and increased strength. In ordering, specify roof pitch, type number of base, and kind of roofing. Type 1 can be installed on either wood or concrete curbs.

SCREENS

Bird and insect screens are obtainable for all stationary type ventilators, as an optional extra. (Rotary Ventilators do not require screens). Screens may be supplied as permanent fixtures or removable for cleaning. Standard screens are galvanized steel. Also available in aluminum and bronze.

DAMPERS AND CONTROLS

Dampers are available, as an optional extra, that may be used with any gravity ventilator. Two standard types are supplied, i.e., disc type and butterfly type. Disc type tilts on an axis with chain and counterbalance. Butterfly type consists of two hinged leaves both of which open downward. Where required, a fusible link in operating chain is provided. Specify if damper is to open or close in case of fire. Six feet of chain is supplied with each unit. Additional chain available. Disc or butterfly dampers are not recommended for use in conjunction with a fan. In such cases, where damper control is desired, an automatic shutter should be used as shown on page 8.



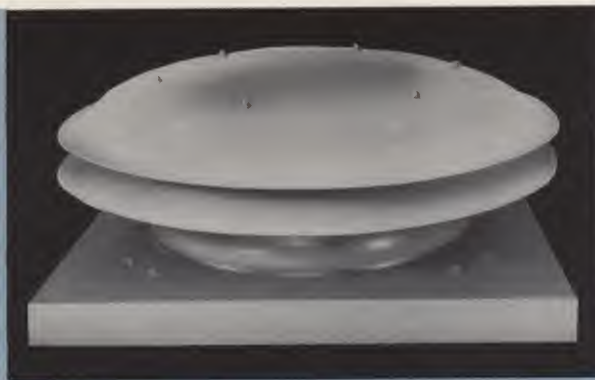
BASE DIMENSIONS IN INCHES

Model No.	A	B	Type 1		Types 2, 3, 4		Gauge Galv. Steel
			C	H	F	H	
B-6	6	10	2	5 1/4	3	6	26
B-8	8	12	2	4 1/2	3	6	26
B-10	10	14	2	5 1/4	3	6 3/4	26
B-12	12	16	2	6 3/4	3	8 1/4	26
B-14	14	18	2	8 1/2	4	8 1/2	26
B-15	15	18	4	8 1/2	4	8 1/2	26
B-16	16	20	4	9	4	9	24
B-18	18	22	4	7 3/4	4	11	24
B-20	20	24	4	10	4	10	24
B-24	24	30	4	9 1/2	4	13	24
B-30	30	36	4	15	4	13	22
B-36	36	42	4	14 3/4	4	14 3/4	22
B-42	42	48	4	22	4	22	20
B-48	48	54	4	22	4	22	20

WESTERNAIRE®

AXIAL ROOF VENTILATOR

low silhouette
hooded exhaust



The Westernaire Hooded Exhaust Ventilator is a high efficiency exhaust fan engineered into a low, weatherproof, streamlined housing compatible with modern architecture. Unusually high flow efficiency is achieved in an extremely low silhouette through the use of an aerodynamically correct spun deflection ring. In fact, exhaust capacity is comparable to that of the Westernaire Vertical Exhaust Ventilator. Designed for both commercial and industrial application, a 360-degree near horizontal discharge pattern provides maximum efficiency regardless of wind direction or velocity. Motors are mounted below the venturi to insure an unobstructed airstream discharge. Standard construction is of heavy gauge steel. The Westernaire Hooded Exhaust Ventilator is also available in aluminum and non-corrosive Fiberglas*.

* TM Owens-Corning Fiberglas Corporation

FEATURES

- Horizontally directed discharge prevents roof damage or deterioration.
- Hood hinged to provide easy access on large models.
- Base and fan inlet are a single integral part.
- Venturi throat section decreases air turbulence at fan.
- Tubular motor bracket for maximum strength on larger models.
- Motor isolation mounts to eliminate vibration.
- Standard models are permanently lubricated and direct driven to eliminate maintenance.
- V-Belt drive available on larger models.
- Automatic or motorized shutters for mounting in curb or extended curb base available.
- Bird or insect screens are an optional accessory.
- Safety disconnect switches raintight and lockable, are an optional accessory.

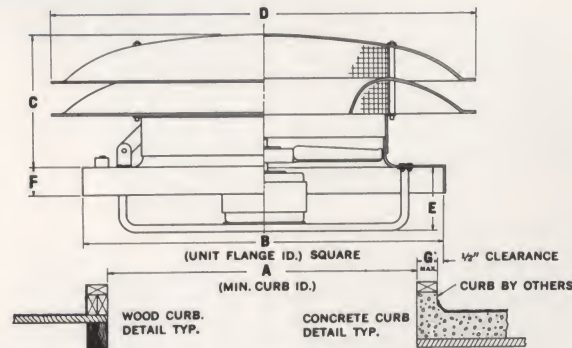
SPECIFICATIONS

Ventilators shall be Westernaire Hooded Exhaust Ventilators as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be of low silhouette design. Base and venturi throat section shall be single integral part. An aerodynamically correct deflection ring shall be provided to insure exhaust efficiency. Exhaust shall be near horizontal to prevent roof damage and deterioration.

Where required, unit shall be equipped with (specify) automatic or motorized shutters mounted within an extended base or installed within the roof curb. Where required, safety disconnect switches shall be provided.

Ventilators shall be constructed of (specify one) heavy gauge steel, aluminum, Fiberglas*.

*TM Owens-Corning Fiberglas Corporation



ENGINEERING DATA

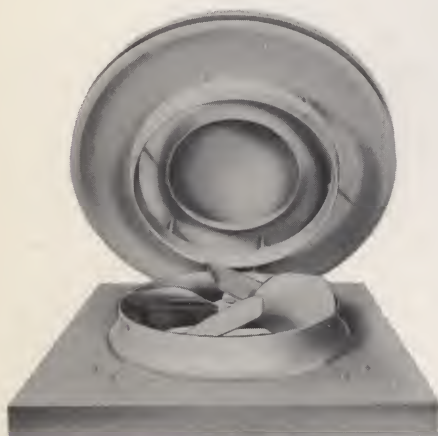
Specifications subject to change without notice. Construct to certified prints.
Fan capacities based on Standard Test Codes.

Dimensions, in.							Hood Material		Model No.	Capacity—CFM			HP	RPM	Phase 60 Cycle
A	B	C	D	E	F	G	Steel	Alum.		0' SP.	1/8' SP.	1/4' SP.			
11	16	8	21 1/2	7 1/4	2	2	20	GA	HEV-10A	631	515	289	0.035	1500	1
11	16	8	21 1/2	7 1/2	2	2	20	GA	HEV-10B	790	666	408	1/20	1500	1
13	18	8	21 1/2	7 1/4	2	2	20	GA	HEV-12A	965	810	550	1/20	1500	1
13	18	8	21 1/2	7 1/2	2	2	20	GA	HEV-12B	1100	960	635	1/20	1500	1
13	18	8	21 1/2	6 3/4	2	2	20	GA	HEV-12C	1340	1190	805	1/10	1500	1
17	22	9 1/2	28 3/8	7 3/4	2	2	20	GA	HEV-14A	1175	990	640	1/20	1500	1
17	22	9 1/2	28 3/8	6 3/4	2	2	20	GA	HEV-14B	1530	1350	830	1/10	1500	1
17	22	9 1/2	28 3/8	6 1/2	2	2	20	GA	HEV-14C	1790	1590	1450	1/6	1500	1
19 1/2	24 1/2	10	28 3/8	6 1/2	2	2	20	GA	HEV-16A	1740	1500	940	1/10	1500	1
19 1/2	24 1/2	10	28 3/8	10 1/4	2	2	20	GA	HEV-16B	1900	1620	940	1/6	1140	1
19 1/2	24 1/2	10	28 3/8	10 3/4	2	2	20	GA	HEV-16C	2300	1970	1200	1/6	1140	1
21	26	11 1/4	35 1/4	10 1/2	2	2	20	GA	HEV-18A	2350	1980	1200	1/6	1140	1
21	26	11 1/4	35 1/4	11	2	2	20	GA	HEV-18B	2770	2410	1470	1/6	1140	1
21	26	11 1/4	35 1/4	11 1/4	2	2	20	GA	HEV-18C	3360	3010	2590	1/4	1140	1
22 1/2	31 1/2	11 1/2	35 3/8	10 1/2	2	4	20	GA	HEV-20A	2510	2170	1430	1/6	1140	1
22 1/2	31 1/2	11 1/2	35 3/8	11	2	4	20	GA	HEV-20B	3020	2710	2110	1/4	1140	1
22 1/2	31 1/2	11 1/2	35 3/8	11 3/4	2	4	20	GA	HEV-20C	3590	3200	2850	1/2	1140	1
22 1/2	31 1/2	11 1/2	35 3/8	11 3/4	2	4	20	GA	HEV-20D	4310	3910	3500	1/2	1140	1-3
28	37	13 1/2	42	7 3/4	2 1/4	4	18	GA	HEV-24A	4640	4225	3480	1/4	860	1-3
28	37	13 1/2	42	7 3/4	2 1/4	4	18	GA	HEV-24B	5480	5180	4440	1/2	860	1-3
28	37	13 1/2	42	7 3/4	2 1/4	4	18	GA	HEV-24C	6220	6065	5660	1/2	1140	1-3
28	37	13 1/2	42	7 3/4	2 1/4	4	18	GA	HEV-24D	7360	7190	6865	1	1140	3
34	43	18 1/4	54 3/4	7 3/4	2 1/4	4	18	GA	HEV-30A	6440	5320	3650*	1/2	600	1-3
34	43	18 1/4	54 3/4	7 3/4	2 1/4	4	18	GA	HEV-30B	7480	6710	5910*	1/2	860	1-3
34	43	18 1/4	54 3/4	13 3/4	2 1/4	4	18	GA	HEV-30C	9100	8450	7500	1	860	3
34	43	18 1/4	54 3/4	13 3/4	2 1/4	4	18	GA	HEV-30D	10000	9610	9050	1 1/2	1140	3
40	49	18 1/2	54 3/4	7 3/4	2 1/4	4	18	GA	HEV-36A	11300	8970	3900	1/2	600	3
40	49	18 1/2	54 3/4	11 3/4	2 1/4	4	18	GA	HEV-36B	14800	13400	11900	1	860	3
40	49	18 1/2	54 3/4	11 3/4	2 1/4	4	18	GA	HEV-36C	16400	14900	13200	1 1/2	860	3
40	49	18 1/2	54 3/4	11 3/4	2 1/4	4	18	GA	HEV-36D	21650	20650	19600	3	1140	3

* Use next higher standard size motor.

All motors totally enclosed except 1/10 HP, 1/6 HP 1500 R.P.M.

Consult our engineering department for capacities at various static pressures and applications involving excessive heat, dust or explosive vapors.



Model HEV-24A
shown with hood open

axial roof ventilators

WESTERNAIRE®

AXIAL ROOF VENTILATOR

**low silhouette
vertical exhaust**



The Westernaire Vertical Exhaust Ventilator is a high-capacity power unit designed specifically for industrial usage. A high velocity discharge projects fumes, smoke, dust-laden and foul air high above the roof to prevent damage to the roof or re-entry to the building. When the fan is operating, the butterfly dampers blow open to permit free exhaust of the contaminated air. When the fan is shut off, the dampers immediately close. If required, a safety device will open dampers automatically in case of fire to vent smoke and reduce heat. Extremely low silhouette is achieved through the use of integral base and fan inlet.

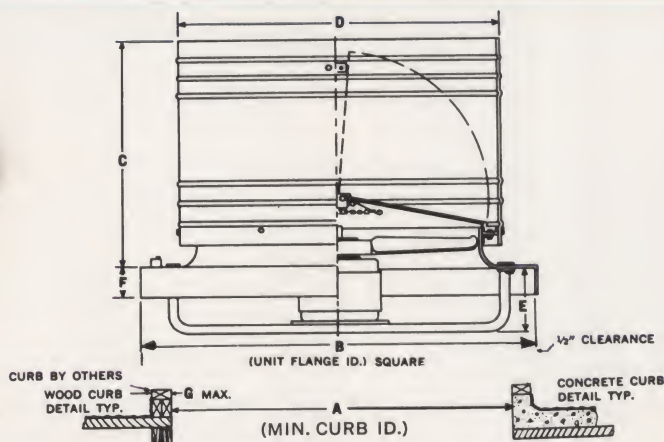
FEATURES

- Heavy gauge steel construction—14 gauge base.
- Venturi throat section decreases air turbulence at fan.
- Weatherproof and stormproof under all conditions.
- Extruded neoprene seal provides positive damper seal.
- Dampers operate on nylon bearings.
- Motor isolation mounts to eliminate vibration.
- Tubular motor bracket for maximum strength on larger models.
- Totally enclosed factory sealed motor requires no lubrication or maintenance.
- Direct driven to eliminate maintenance.
- V-belt drive available.
- Safety disconnect switches raintight and lockable, are an optional accessory.

SPECIFICATIONS

Ventilators shall be Westernaire Vertical Exhaust Ventilators as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be of low silhouette design. Base and venturi throat section shall be single integral part. Extruded neoprene seal to provide positive damper seal shall be provided. "Blow-open" dampers shall operate on nylon bearings. Ventilators shall be constructed of heavy gauge steel construction, 14 gauge base. Ventilators shall be completely rainproof and stormproof. Safety device (specify if required) shall open dampers automatically in case of fire to vent smoke and reduce heat.

Consult our engineering department for capacities at various static pressures and applications involving excessive heat, dust or explosive vapors.

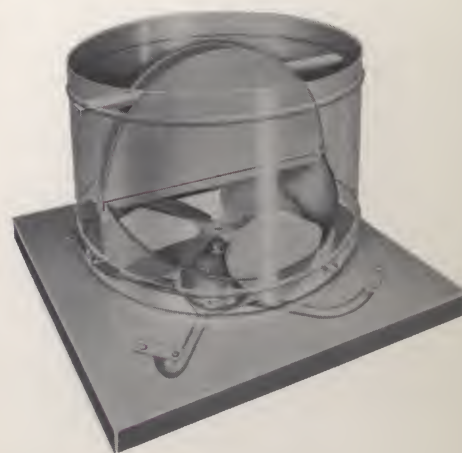


ENGINEERING DATA

Specifications subject to change without notice. Construct to certified prints. Fan capacities based on Standard Test Codes.

Dimensions, In.							Head Material Galv. Steel	Model No.	Capacity—CFM			HP	RPM	Phase 60 Cycle
A	B	C	D	E	F	G			0' SP.	1/4' SP.	1/2' SP.			
28	37	21	29	6 3/4	2 1/4	4	22 GA	VEV-24A	4640	4225	3480	1/4	860	1-3
28	37	21	29	6 3/4	2 1/4	4	22 GA	VEV-24B	5480	5180	4440	1/2	860	1-3
28	37	21	29	6 3/4	2 1/4	4	22 GA	VEV-24C	6220	6065	5660	1/2	1140	1-3
28	37	21	29	6 3/4	2 1/4	4	22 GA	VEV-24D	7360	7190	6865	1	1140	3
34	43	24	35	6 3/4	2 1/4	4	22 GA	VEV-30A	6440	5320	3650*	1/2	600	1-3
34	43	24	35	6 3/4	2 1/4	4	22 GA	VEV-30B	7480	6710	5910*	1/2	860	1-3
34	43	24	35	11 3/4	2 1/4	4	22 GA	VEV-30C	9100	8450	7500	1	860	3
34	43	24	35	11 3/4	2 1/4	4	22 GA	VEV-30D	10000	9610	9050	1 1/2	1140	3
40	49	28	41	6 3/4	2 1/4	4	22 GA	VEV-36A	11300	8970	3900	1/2	600	3
40	49	28	41	11 3/4	2 1/4	4	22 GA	VEV-36B	14800	13400	11900	1	860	3
40	49	28	41	11 3/4	2 1/4	4	22 GA	VEV-36C	16400	14900	13200	1 1/2	860	3
40	49	28	41	11 3/4	2 1/4	4	22 GA	VEV-36D	21650	20650	19600	3	1140	3
46	55	31	47	11 3/4	2 1/4	4	22 GA	VEV-42A	16200	14700	13250	3/4	600	3
46	55	31	47	11 3/4	2 1/4	4	22 GA	VEV-42B	18000	15500	12200	1	600	3
46	55	31	47	11 3/4	2 1/4	4	22 GA	VEV-42C	23400	21800	20100	2	860	3
46	55	31	47	11 3/4	2 1/4	4	22 GA	VEV-42D	26000	24300	22500	3	860	3
52	61	37	53	11 3/4	2 1/4	4	22 GA	VEV-48A	20000	17400	14150	1	600	3
52	61	37	53	13 3/4	2 1/4	4	22 GA	VEV-48B	23800	21200	18000	1 1/2	600	3
52	61	37	53	11 3/4	2 1/4	4	22 GA	VEV-48C	29200	26750	25200	3	860	3
52	61	37	53	13 3/4	2 1/4	4	22 GA	VEV-48D	38750	36800	34800	5	860	3

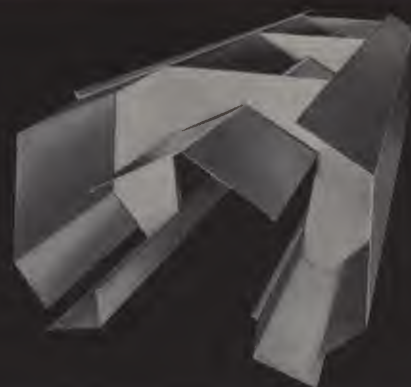
* Use next higher standard size motor.



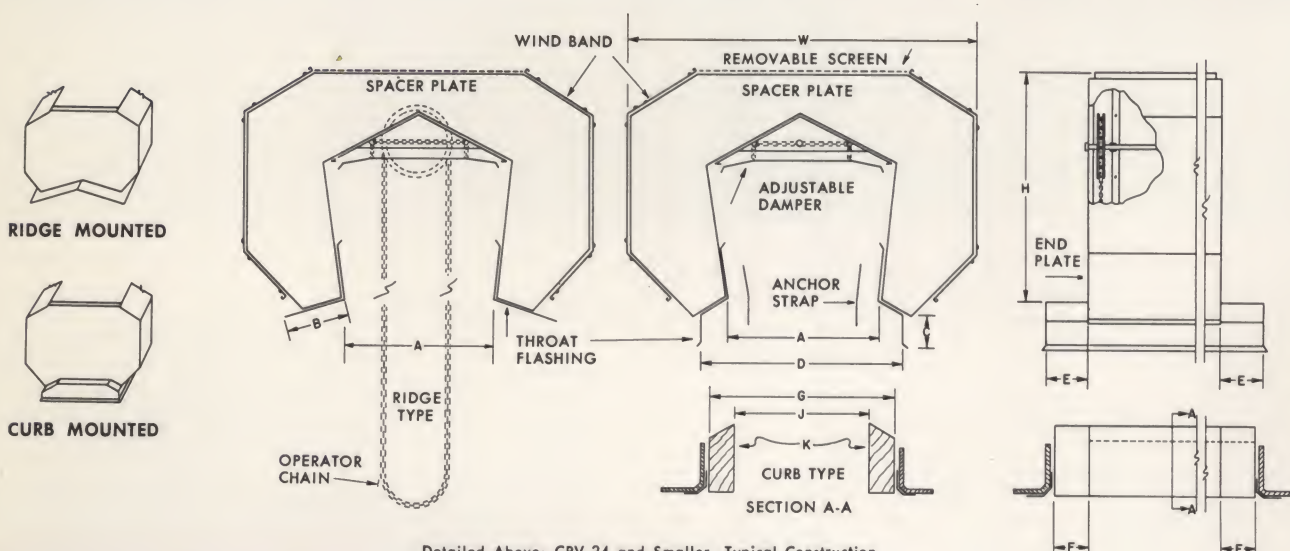
WESTERN CONTINUOUS RIDGE VENTILATOR

low silhouette
gravity exhaust

See page 6 for Solaraire Modification



Illustrated: CRV-24 and Smaller, Typical Construction



Detailed Above: CRV-24 and Smaller, Typical Construction

CRV SELECTION

In order to determine exhaust capacity, multiply rating of desired size as shown on basic Capacity Chart, by height and temperature factor. (Height is distance between air intake and ventilator.) Temperature is difference between indoor and outdoor temperature.

Basic Capacity Chart

Size	CFM per 10' Length
4	1,300
6	1,950
9	2,925
12	3,900
15	4,875
18	5,850
20	6,500
24	7,800
30	9,750
36	11,750
42	13,650
48	15,600

ENGINEERING DATA

Throat Size In.	Model No.	Dimensions—In.										Galv. Ship. Wt. Lbs. per Lin. Ft.
		Ventilator					Building Curb					
		Ridge	Curb		Overall							
A		B	C	D	H	W	E	F	G	J	K	
4	CRV-4	4½	2	8¾	8	11	2¼	1⅝	7¼	4	2x6	8
6	CRV-6	5	2½	10¾	10	15	2¼	1⅝	9¼	6	2x6	10
9	CRV-9	5	2½	13¾	16	23	2¼	1⅝	12¼	9	2x6	15
12	CRV-12	5	2½	16¾	18	28	2¼	1⅝	15¼	12	2x6	23
15	CRV-15	6¼	2½	21¾	22	34	3¼	2⅝	20¼	15	3x6	29
18	CRV-18	7	2½	26¾	27	43	4¼	3⅝	25¼	18	4x6	35
20	CRV-20	8	3½	28¾	30	45	4¼	3⅝	27¼	20	4x6	42
24	CRV-24	11	3¼	32¾	36	54	4¼	3⅝	31¼	24	4x6	55

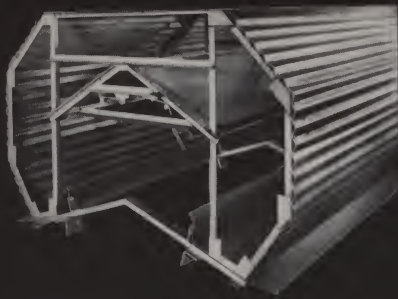
GALV. MATERIAL: CRV 4-12 24 Ga., 15-8 22 Ga., 20-24 20 Ga.

Height and Temperature Factors

Stack Height	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	75'	80'
Temperature															
5°	.36	.48	.54	.59	.63	.66	.69	.72	.74	.77	.79	.81	.83	.85	.87
10°	.54	.63	.69	.74	.79	.83	.87	.91	.94	.97	1.00	1.04	1.06	1.09	1.12
15°	.63	.72	.79	.85	.91	.98	1.00	1.05	1.09	1.13	1.17	1.20	1.24	1.27	1.30
20°	.69	.79	.87	.94	1.00	1.06	1.12	1.17	1.21	1.26	1.30	1.34	1.38	1.42	1.45
25°	.74	.85	.94	1.02	1.09	1.15	1.21	1.27	1.32	1.37	1.42	1.46	1.51	1.55	1.59
30°	.79	.91	1.00	1.09	1.17	1.24	1.30	1.36	1.42	1.47	1.53	1.57	1.62	1.67	1.71
35°	.83	.99	1.06	1.15	1.24	1.31	1.38	1.45	1.51	1.56	1.62	1.67	1.73	1.81	1.83
40°	.87	1.00	1.12	1.21	1.30	1.38	1.45	1.52	1.61	1.65	1.71	1.77	1.83	1.87	1.93
45°	.91	1.05	1.17	1.27	1.36	1.45	1.52	1.60	1.67	1.73	1.80	1.86	1.91	1.97	2.01

ROOF VENTILATORS

continuous ridge (gravity)

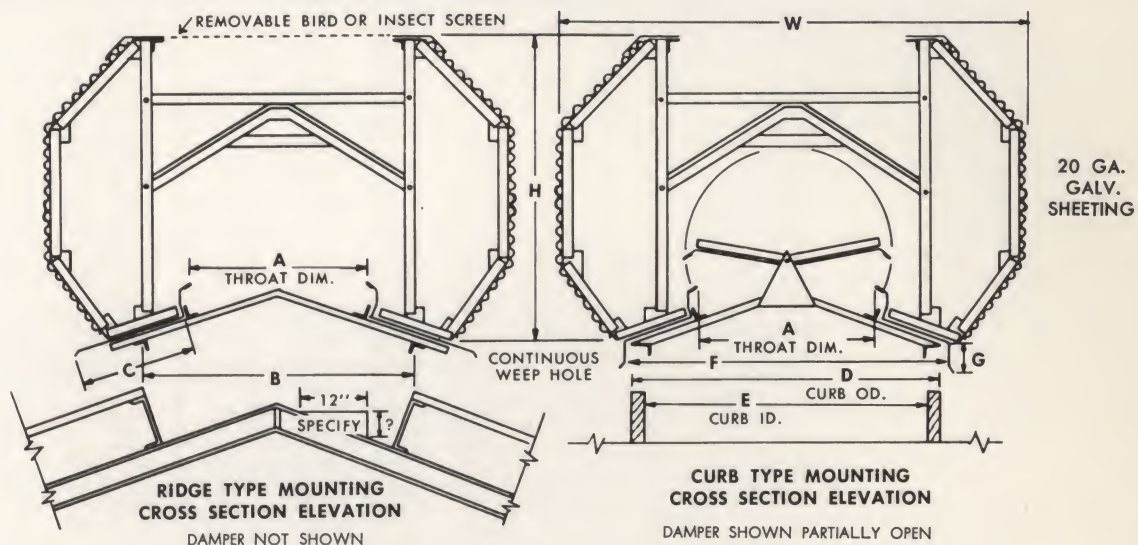


Illustrated: CRV-30 and Larger, Typical Construction

High volume exhaust capacity is obtained with the Western Continuous Ridge Ventilator without sacrificing architectural beauty. Fabricated in any desired length to fit any type of roof, this ventilator is available in throat sizes from 4" to 48" and larger. Western Continuous Ridge Ventilators are heavily constructed to withstand any normally encountered wind velocity.

FEATURES

- Fabricated in galvanized steel, aluminum or asphalt-asbestos coated steel.
- Available with or without dampers, bird screens and insect screens. Dampers are either manually operated or motor operated.
- Stormproof, excellent drainage, maximum air flow.
- Paint or special coatings are offered as an extra if desired.



Detailed Above: CRV-30 and Larger, Typical Construction

ENGINEERING DATA

Throat Size In. A	Model No.	Mounting Dimensions—In.										Ventilator Dimensions In.		Galv. Ship. Wt. Lbs. per Lin. Ft.
		Ridge Type		Flat or Pitched Roof with Curb										
				B	C	D		E		F					G
		Min.	Max.		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	H		W
30	CRV-30	39¼	53¼	16¾	38¾	53	39¾	54	45¼	55½	3¼	44½	72½	75
36	CRV-36	47	61	16¾	46½	60¾	47½	61¾	53	64¾	2¾	53½	85¼	87
42	CRV-42	55¼	66½	16¾	54¾	66¾	55¾	67¾	61¼	69¾	1¾	59½	100	110
48	CRV-48	61¼	74½	16¾	60¾	74¾	61¾	75¾	67½	77¼	2½	64	111	125

Note: Sizes 6 in. through 24 in.—all sheet steel construction. Sizes 30 in. and larger—corrugated sheet with angle iron frame. For sizes not listed contact the factory.

SPECIFICATIONS

Ventilators shall be of the continuous opening type as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be of the sizes as shown on the drawings. Ventilators shall be weatherproof and stormproof under all operating conditions. They shall be capable of self-cleaning by action of the elements, with provision for carrying water and normal wind-transported soil matter to the outside. Ventilators shall be designed to withstand wind velocity of 85 mph. Where necessary, ventilators shall be equipped with dampers that are an integral part of the ventilator. Dampers shall be: (specify one) manually or electrically operated, and so constructed as to permit being set at any desired opening. Ventilators shall be constructed of (specify one) Galvanized steel, corrugated steel, asphalt-asbestos coated steel, aluminum.

OPTIONAL EXTRAS

FRAMES*—Painted angle iron on approximately 5 ft. centers (standard). Hot dipped galvanized after fabrication, aluminum alloy, stainless steel, acid resistant or asphaltic finish.

SHEETING—Galvanized (standard). Aluminum alloy, copper, stainless steel, protected metal, lead flashings.

DAMPER—Manual, continuous chain operated, pole operation, motorized operation with remote control.

SCREENS—Removable bird or insect screen, galvanized, aluminum, copper.

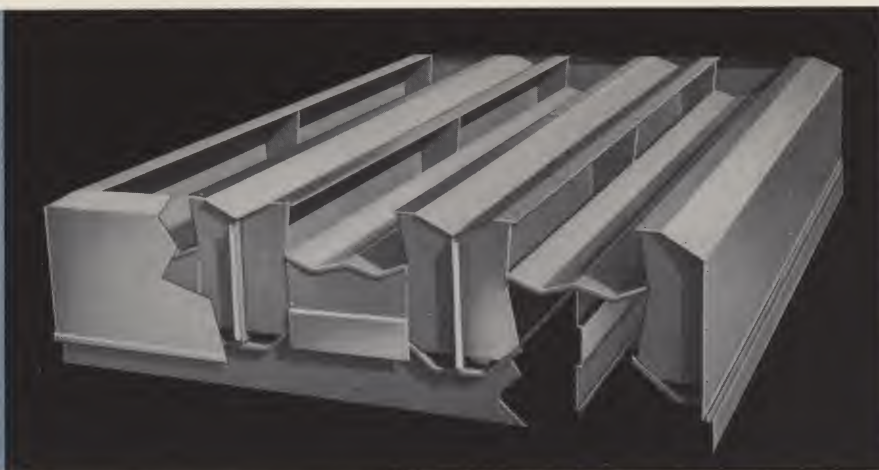
*CRV-30 and larger.

WESTERN THERMOFLOW

low silhouette

- only 21 1/2" low
- over 33 square feet opening
- over 44% free air

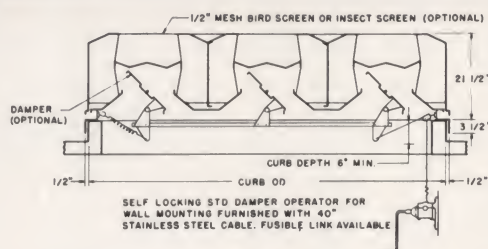
See page 6 for Solaraire Modification



The Western Thermoflow unit ventilator is a gravity roof ventilator designed to exhaust tremendous air masses by the convection current principle. Huge quantities of gases, smoke, fumes, and contaminated air are extracted by the Western Thermoflow, quietly, efficiently, without power cost. Friction loss through the ventilator has been practically eliminated by the short, unrestricted travel distance.

Engineered for heavy industrial applications, the Western Thermoflow is relatively inconspicuous and may be installed on schools, warehouses and factories. The units are designed to mount on a curb and rise only 21 1/2" above the curb. Each standard unit is 7'6" wide and 10' long and consists of three operating cells. Units may be installed singly, multiples side by side, multiples end to end, or multiples of double units.

The Western Thermoflow is completely weathertight, providing non-clogging drainage to the roof. Bird screens are offered as an optional extra.



Dampers, operating silently and efficiently on nylon bearings, are offered as an optional extra. All dampers operate simultaneously, to any degree of opening, by worm gear wall mounted crank operators or motor operators, if desired. For fire and smoke emergency relief, fusible links will automatically open the dampers, thus minimizing costly damage.

ENGINEERING DATA

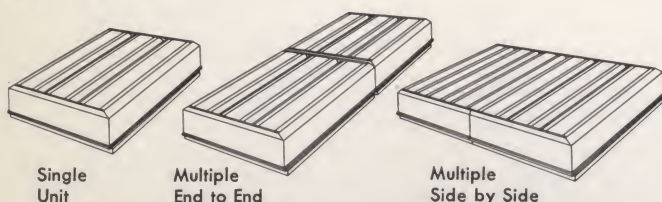
Size	Curb O.D.	Net Wt. (lb)	
		Galv.	Alum.
10'0" x 7'6"	9'6" x 7'6"	550	280
10'0" x 5'0"	9'6" x 5'0"	370	187
7'6" x 7'6"	7'0" x 7'6"	410	210
5'0" x 7'6"	4'6" x 7'6"	290	150
5'0" x 5'0"	4'6" x 5'0"	245	130

NOTE: The standard Thermoflow unit is the 10'0" x 7'6". The other sizes shown are available.

Material Gauges	Curb	Braces	Caps, Gutters, Troughs
Galv. and S.S.	16	18	22
Aluminum	14	16	20
Copper (oz.)	48	24	24

SPECIFICATIONS

Ventilators shall be Western Thermoflow as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be designed for curb mounting. Ventilators shall be constructed of: (specify one) Galvanized Steel, Aluminum, Copper, Stainless Steel, Protected Metal, and of the gauges standard with Western Engineering & Mfg. Co. All parts shall be self-supporting and stand without deflection. Standard Western Thermoflow shall be 21 1/2" high by 7'6" by 10'0" and shall provide a minimum of 44% of the total ventilator area as open throat area. Dampers, where required, shall operate simultaneously on nylon bearings by: (specify one) self-locking standard damper operator for wall mounting furnished with stainless steel cable, or motor operated, and constructed as to permit being set at any desired opening, and shall open and close positively. Dampers, where required, may be supplied with fusible link to open automatically in case of fire.



Four multiple side by side units—Federal Prison, Terminal Island

CAPACITY

In order to determine exhaust capacity of standard unit, multiply base rating of 17,000 CFM by height and temperature factor. (Height is distance between air intake and ventilator. Temperature is difference between indoor and outdoor temperature.)

Height and Temperature Factors

Stack Height	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	75'	80'
Temperature															
5°	.32	.39	.44	.49	.53	.56	.59	.62	.65	.68	.70	.73	.75	.76	.78
10°	.41	.51	.59	.65	.70	.74	.76	.82	.85	.89	.93	.96	.99	1.02	1.03
15°	.49	.60	.69	.76	.82	.85	.92	.96	1.01	1.05	1.09	1.13	1.15	1.19	1.21
20°	.55	.67	.76	.85	.92	.97	1.03	1.08	1.13	1.18	1.22	1.27	1.30	1.33	1.37
25°	.59	.73	.84	.92	1.00	1.05	1.12	1.16	1.22	1.28	1.33	1.37	1.40	1.44	1.46
30°	.64	.79	.89	1.00	1.07	1.14	1.21	1.27	1.33	1.38	1.44	1.48	1.53	1.57	1.59
35°	.69	.84	.96	1.06	1.15	1.21	1.28	1.35	1.41	1.47	1.53	1.58	1.63	1.67	1.70
40°	.72	.88	1.03	1.12	1.22	1.28	1.37	1.43	1.50	1.57	1.64	1.68	1.72	1.77	1.79
45°	.76	.93	1.07	1.18	1.27	1.35	1.41	1.50	1.57	1.63	1.71	1.76	1.79	1.84	1.88

for special applications



**WESTERN
TRANSAIRE**
for continuity
of roof appearance

low silhouette

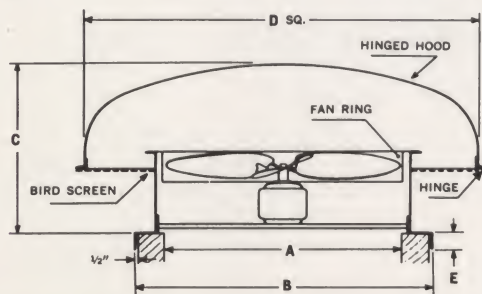
- gravity
- power
- intake
- exhaust



Low silhouette Western Transaire Ventilators are engineered to provide a basic product adaptable to several entirely different requirements. The Transaire may be used as a gravity ventilator or as a relief ventilator where internal positive pressure exists. Powered Transaire units are available to provide maximum intake or exhaust capacity wherever required. Employment of Western Transaire Ventilators assures complete continuity of roof appearance regardless of the various functions each individual basic product may be performing.

FEATURES

- Outlet area 150% of curb opening area.
- Hinged hood for maximum access on larger powered units.
- Weatherproof and stormproof.
- Motor isolation mounts to eliminate vibration.
- Available in galvanized steel, aluminum, copper or stainless steel.
- Available with automatic or chain-operated dampers.



SPECIFICATIONS

Ventilators shall be Western Transaire as manufactured by Western Engineering & Mfg. Co. of Venice, California, and shall be of low silhouette design. Ventilator outlet area shall be at least 150% of curb opening area. Ventilators shall be constructed of (specify one) galvanized steel, aluminum, copper or stainless steel, and of the gauges standard with Western Engineering & Mfg. Co. Western Transaire Ventilators, where powered, shall contain a complete motor-fan assembly including vibration absorptive mountings. Ventilators shall be weatherproof and shall be constructed to withstand the encountered wind velocities. Where necessary, dampers (specify type) automatic or chain operated shall be provided.

SUPPLY MODEL INFORMATION (TSD and TSB)

The amount of foreign matter, airborne material and moisture that may be introduced through intake units is determined by intake velocity (CFM ÷ throat area × 150%). The table shown below is to be used as a guide only, as each application must be resolved on its own merits.

Intake velocity

- 0-500 FPM—Airborne dust particles, vapor, etc.
- 500-1000 FPM—Airborne dust, mist, etc.
- 1000 or more FPM—Airborne solids, water particles during rain.

ENGINEERING DATA

Specifications subject to change without notice. Construct to certified prints. Fan capacities based on Standard Test Codes.

Mat'l. GA Steel	Dimensions, In.					Model No.	Fan		Motor		Capacity—CFM		
	A	B	C	D	E		Dia.	RPM	HP	Phase	0° SP.	1/8° SP.	1/4° SP.
20-24	12	17	13	22	2	TGV-12	10	1500	.035	1	505	345	.....
20-24	12	17	15	22	2	TED-12A	12	1500	.035	1	795	570	.....
20-24	12	17	15	22	2	TED-12B	12	1500	.035	1	795	570	.....
20-24	12	17	15	22	2	TED-12C	12	1500	1/10	1	955	725	.....
20-24	16	21	14	28	2	TGV-16	14	1500	1/20	1	1045	895	.....
20-24	16	21	18	28	2	TED-16A	14	1500	1/10	1	1295	1115	.....
20-24	16	21	18	28	2	TED-16B	14	1500	1/10	1	1295	1115	.....
20-24	16	21	18	28	2	TED-16C	16	1500	1/8	1	1615	1455	1240
20-24	16	21	18	28	2	TED-16D	16	1140	1/6	1	1700	1405	.....
20-22	20	29	16	35	2	TGV-20	20	1140	1/6	1	2400	1800	.....
20-22	20	29	21	35	2	TED-20A	20	1140	1/4	1	2925	2580	.....
20-22	20	29	21	35	2	TED-20B	20	1140	1/4	1	2925	2580	.....
20-22	20	29	21	35	2	TED-20C	20	1140	1/3	1	3500	3250	2780
20-22	20	29	21	35	2	TED-20D	20	1140	1/2	1-3	4130	3800	3325
18-22	24	33	16 1/4	40	3	TGV-24	24	860	1/4	1-3	4225	3480	2485
18-22	24	33	21 1/4	40	3	TED-24A	24	860	1/2	1-3	5180	4440	3260
18-22	24	33	21 1/4	40	3	TED-24B	24	860	1/2	1-3	5180	4440	3260
18-22	24	33	21 1/4	40	3	TED-24C	24	1140	1/2	1-3	6065	5660	5080
18-22	24	33	21 1/4	40	3	TED-24D	24	1140	1	3	7190	6865	6380
18-22	30	39	22	50	3	TGV-30	30	600	1/2	1-3	5320	3650	.....
18-22	30	39	28	50	3	TED-30A	30	860	3/4	1-3	6710	5910	4450
18-22	30	39	28	50	3	TED-30B	30	860	1	3	8450	7500	6400
18-22	30	39	28	50	3	TED-30C	30	860	1	3	8450	7500	6400
18-22	30	39	28	50	3	TED-30D	30	1140	1 1/2	3	9610	9050	8330
18-20	36	45	24 1/4	59	3	TGV-36	36	600	1/2	3	8970	3900	.....
18-20	36	45	30 1/4	59	3	TED-36A	36	860	1	3	13400	11900	10800
18-20	36	45	30 1/4	59	3	TED-36B	36	860	1 1/2	3	14900	13200	11300
18-20	36	45	30 1/4	59	3	TED-36C	36	860	1 1/2	3	14900	13200	11300
18-20	36	45	30 1/4	59	3	TED-36D	36	1140	3	3	20650	19600	18700
18-20	42	51	26 1/4	69	3	TGV-42	42	600	3/4	3	14700	13250	11700
18-20	42	51	36 1/4	69	3	TED-42A	42	600	1	3	15500	12200	11200
18-20	42	51	36 1/4	69	3	TED-42B	42	600	1	3	15500	12200	11200
18-20	42	51	36 1/4	69	3	TED-42C	42	860	2	3	21800	20100	16200
18-20	42	51	36 1/4	69	3	TED-42D	42	860	3	3	24300	22500	20400
16-20	48	57	31 1/2	82	3	TGV-48	48	600	1	3	17400	14150	.....
16-20	48	57	41 1/2	82	3	TED-48A	48	600	1 1/2	3	21200	18000	17250
16-20	48	57	41 1/2	82	3	TED-48B	48	600	1 1/2	3	21200	18000	17250
16-20	48	57	41 1/2	82	3	TED-48C	48	860	3	3	26750	25200	23500
16-20	48	57	41 1/2	82	3	TED-48D	48	860	5	3	37400	35200	32100
16-18	54	67	34 1/2	90	4	TGV-54	54	450	1	3	22500	17500	.....
16-18	54	67	46 1/2	90	4	TED-54A	54	600	3	3	29000	25500	22500
16-18	54	67	46 1/2	90	4	TED-54B	54	600	3	3	29000	25500	22500
16-18	54	67	46 1/2	90	4	TED-54C	54	860	5	3	41400	38200	34600
16-18	54	67	46 1/2	90	4	TED-54D	54	1140	7 1/2	3	46700	44300	41900
16-18	60	73	37	100	4	TGV-60	60	600	3	3	33300	29000	24000
16-18	60	73	49	100	4	TED-60A	60	860	5	3	47200	43700	.....
16-18	60	73	49	100	4	TED-60B	60	860	5	3	47200	43700	.....
16-18	60	73	49	100	4	TED-60C	60	1140	7 1/2	3	54000	51000	48000
16-18	60	73	49	100	4	TED-60D	60	1140	10	3	59200	56500	53200

Note: All motors permanently lubricated. All motors totally enclosed, except 1/10 HP, 1/6 HP 1500 R.P.M.
TED and TSD specifications are interchangeable.

Transaire Model Identification

- TGV—Gravity, Intake or Relief
- TED—Exhaust, Direct Drive
- TEB—Exhaust, Belt Drive
- TSD—Supply, Direct Drive
- TSB—Supply, Belt Drive

Consult our engineering department for TEB and TSB models, units to meet your specific requirements, and for powered models other than those listed.



ROOF VENTILATORS

factory representatives

DOMESTIC and U. S. POSSESSIONS

ALABAMA, Birmingham, Brownlee-Morrow Engr. Co., P. O. Box 3155, LY 2-8143
ARIZONA, Phoenix, Fred D. Marshall, 606 So. Hill St., Rm 504, Los Angeles 14, California, MADison 2-1444
ARKANSAS, Little Rock, Kamsco, 1533 N. E. 34th St., Oklahoma City, Oklahoma, GARfield 7-6067
CALIFORNIA, Bakersfield, Fred D. Marshall, 606 S. Hill St., Rm. 504, Los Angeles 14, California, MADison 2-1444
Los Angeles, Western Engineering & Mfg. Co., UP-06183
San Diego, Fred D. Marshall, 606 So. Hill St., Rm 504, Los Angeles 14, California, MADison 2-1444
San Francisco, The Cookson Co., 1525 Cortland Ave., VAlencia 6-4422
COLORADO, Denver, E. P. Murr, 2243 W. 32nd Ave. (Room 202), GEEnessee 3-3335
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